

(19) World Intellectual Property
Organization
International Bureau



Rec'd PCT/PTG 29 MAR 2005

(43) International Publication Date
15 April 2004 (15.04.2004)

PCT

(10) International Publication Number
WO 2004/031709 A3

(51) International Patent Classification⁷: G08B 23/00

(21) International Application Number:
PCT/US2003/031326

(22) International Filing Date: 2 October 2003 (02.10.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/415,373 2 October 2002 (02.10.2002) US

(71) Applicant and

(72) Inventor: KAIN, Aron, Zev [US/US]; 1 Jodi Court, Wesley Hills, NY 10952 (US).

(74) Agents: HELFGOTT, Samson et al.; Katten, Muchin, Zavis, Rosenman, 575 Madison Avenue, New York, NY 10022-2585 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,

CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

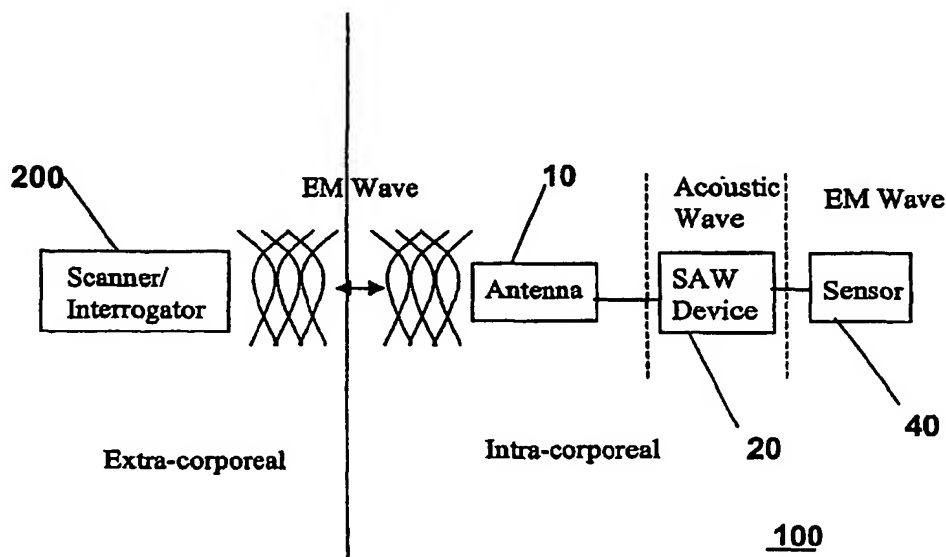
Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
22 July 2004

[Continued on next page]

(54) Title: WIRELESS SYSTEM FOR MEASURING PRESSURE AND FLOW IN TUBES



(57) Abstract: A remote sensor (100) is remotely placed within a vessel containing a fluid in order to sense a pressure generated by the fluid. The sensor includes an antenna (10) for capturing an externally-generated interrogation signal and for transmitting a response signal, a response circuit (20, 30) coupled to the antenna (10) for receiving the interrogation signal and for generating the response signal, and a sensor element (40) coupled to the response circuit. One or more electrical characteristics of the response circuit (20, 30) change in relation to the sensed pressure, thereby determining measurable characteristics of the response signal. Importantly, the response circuit (20, 30) operates to delay the transmission of the response signal to a time separated from and following transmission of artifacts of the interrogation signal.

WO 04/031709 A3



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/31326

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G08B 23/00

US CL : 340/573.1

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 340/573.1, 573.4, 572.8, 340.06, 825.17; 73/702, 703

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NoneElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,346,886 B1 (DE LA HUERGA) 12 February 2002 (12.02.2002), entire document.	1-23
A	US 5,904,708 A (GOEDEKE) 18 May 1999 (18.05.2002), entire document.	1-23

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

11 May 2004 (11.05.2004)

Date of mailing of the international search report

03 JUN 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703)305-3230

Authorized officer

William Oen

Telephone No. 571-272-2186